ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

May 14th, 1957.
Vol. 17...No. 7

Dear Sir:

First commercially financed research in U.S. in field of controlled thermonuclear reactions is now getting underway with recent signing of contract for joint sponsorship by Texas Atomic Energy Research Foundation and General Atomic division of General Dynamics Corp. for a 4-year, $10 million research program in this field. Research will be at General Atomic's new San Diego, Calif., laboratory where initial work already has begun. Eleven Texas utility firms make up the Foundation (this LETTER, Vol. 17, No. 5, p.3). Costs of the program will be split between General Dynamics and the Foundation on an approximate 50-50 basis, with each utility charging its pro rata share as a research expense. Objectives of the 4-year program are an understanding of heavy hydrogen reactions at high temperatures under controlled conditions. Ultimate aim is economic energy production from such controlled thermonuclear energy. (Other BUSINESS NEWS, p. 2 this LETTER.)

Second OEEC information conference on nuclear energy for management is to be be held in Amsterdam, Holland, June 26-29, 1957, following large interst shown in the first conference which was in Paris, France, April 1-5, 1957. This second program includes talks on basic and applied research, reactor technology, role of industry in research, nuclear fuels, etc. Enrollment fee is 15,000 French francs. Full details may be obtained from OEEC (Organization for European Economic Cooperation), Washington, D.C.

New subsidiary of Isotopes, Inc., Westwood, N.J., is Crystals, Inc., which will do basic and applied research in all phases of crystal growing. It will also manufacture and sell plastic scintillators, organic scintillation crystals, and inorganic crystals of various types, for beta, gamma and neutron detection and counting. Isotopes, Inc., has been doing nuclear consulting, project research and development, radiochemical analyses, etc. Staffing Crystals, Inc., will be J.H. Griffin, handling sales; L. Musicant, in charge of research and production; and I. Schulz, as director of engineering. All had been with National Radiac, Inc., Newark. (Other MANUFACTURERS' NEWS, PRODUCTS, PROCESSES, p. 4 this LETTER.)

Gross sales of Radiation Counter Laboratories, Inc., Skokie, Ill., during first quarter of 1957 increased 290% over same period last year, according to company officials. Shipments made in this first quarter by the firm include instrumentation for the Kaiser engineering test reactor; the M.I.T. reactor; Brazilian reactors in Sao Paulo; Curtiss-Wright research reactor; and other reactor control systems. (Other FINANCIAL NEWS, p. 2 this LETTER.)

Temporary suspension of USAEC license of M. W. Kellogg Co., S. Houston, Tex., has been ordered by the Commission pending completion of its investigation of radiation accident in company's laboratory in which two employees were exposed and premises contaminated when irradiated pellets of a mixture of compressed irridium-192 and aluminum metal powder were broken while being uncanned. Kellogg encapsulates and sells iridum-192 for use in industrial radiography. The firm has engaged Tracerlab to completely decontaminate all areas and dispose of radioactive wastes.

Copyright, Atomic Energy Newsletter. All rights reserved.

ATOMIC ENERGY BUSINESS NEWS...

NUCLEAR RESEARCH FACILITY TO BE DEDICATED:- Largest privately financed nuclear research facility in the U.S., General Electric Co.'s Vallecitos laboratory, will be dedicated next Wednesday (May 22nd). Major components of the multi-million dollar facility (under construction since April, 1956) include a radioactive materials unit, an experimental physics building, and a developmental boiling water power reactor. The boiling water reactor initially will be used for development work on the 180,000-kilowatt Dresden power station of the Commonwealth Edison Co.; later it will be used for development of other types of power reactors.

MATERIALS TESTING REACTOR TO BE BUILT:- Corporate decision has been made by Westinghouse Electric Corp., Pittsburgh, to proceed with construction of its planned materials testing reactor, which will be the first industry-owned reactor of this type in the U.S. Although in the planning stage for some time, construction of the reactor had been deferred late last year while the firm re-evaluated its relation to the company's nuclear power development program. Site of the new testing reactor will be Waltz Mill, Pa., some 29-miles southeast of downtown Pittsburgh, and will be the sixth major nuclear installation Westinghouse operates in this area.

INSURANCE FOR NUCLEAR INSTALLATIONS BEING OFFERED:- Public liability and property damage insurance coverage for nuclear installations is already being written by inter-company pools set up for this specific purpose, spokesmen for underwriters told the American Management Association insurance conference in New York last week. Binders have been taken and first tentative premiums collected, they said. While nuclear liability rates are still tentative and provisional, some typical costs were cited by C. J. Haugh, of Travelers Insurance Co., who spoke for the Nuclear Energy Liability Insurance Association, made up of some 138 companies and insurance groups. Mr. Haugh said annual costs of $50 million liability coverage on a boiling water reactor of 600-megawatts heat capacity in a high-value farm area would be $250,000. On a pressurized water reactor with 480-megawatts of heat in a sparsely populated rural area annual liability would be $130,000. Property damage coverage, given by W. H. Berry, of Continental Insurance Co., speaking for Nuclear Energy Property Insurance Association, would be about $198,000 for the 600-megawatt plant, on a $40 million valuation. For the 480-megawatt plant, annual premium would be about $142,000 assuming a $30 million valuation he said.

FINANCIAL NEWS:- Private placement of some 85,000 shares was recently completed by United Western Minerals to an investment group including Atomic Development Mutual Fund, Union Securities, and the Baird Foundation, among others.....Tracerlab, Inc., Waltham, Mass., nuclear products firm, showed a net loss of $1,336,000 for the year 1956. This was a result not only of losses from operations but also of very substantial write-downs of inventories, primarily in its Keleket X-ray division. The firm expects its corrective measures: increases in selling prices, reduction of expenses, consolidation of operations in new plant at Walthamm, and discontinuance of unprofitable items, to be reflected in its 1957 profit-and-loss statement..... Brokers analyses are available from Morris Cohon & Co., 42 Broadway, New York, N.Y., who offer a 24-page brochure on Mallinckrodt Chemical and the Atomic Age, and a 26-page booklet reviewing Metals & Control Corp. Cruttenden, Podesta & Co., Chicago, has an analysis of Nuclear-Chicago Corp.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear topics...

Techniques of Radiobiochemistry, by San Arnoff. A text on the subject. 228 pages.--Iowa State College Press, Ames, Iowa ($5.95)

Nuclear Notes for Industry; issue of Apr. 26, 1957. Guide to unclassified USAEC-developed information of special industrial interest.....What's available in the Unclassified Atomic Energy Literature. Revision no. 3, Jan. 1957. No. TID-4550 --Both from USAEC, Oak Ridge, Tenn. (n/c)

Atomic Energy Applications with Reference to Underdeveloped Countries, by B. C. Netschert, S. H. Schurr. Study made for Resources for the Future, Inc. 129 pages. Johns Hopkins Press, Homewood, Baltimore 18, Md. ($2.00)

Economics of Nuclear Power, Edited by J. Gueron (France); I. R. Maxwell (England); and J. A. Lane, J. R. Menke (U.S.). Geneva Conference papers dealing with the economics, administration and legal problems of nuclear power. 513 pages.--McGraw-Hill Book Co., New York, 36 ($17.00)

Nuclear Power and Economic Development in Brazil. A study by the National Planning Association. --126 pages.--National Planning Assoc., Wash. D.C. ($2.75)

INTERNATIONAL ATOMIC ENERGY NEWS...

FRANCE:- A program with its goal 15 million kilowatts of nuclear-power-generated electrical capacity by 1967 for the EURATOM nations was urged in a comprehensive report made public in Paris last week by the "three wise men of EURATOM": Louis Armand of France; Franz Etzel of W. Germany; and Francesco Giordani of Italy. The goal was suggested for the six nations making up the European Atomic Energy Community (EURATOM): France, W. Germany, Italy, Belgium, Holland, and Luxembourg. The three authors of the report made prolonged visits to Britain, Canada, and the United States and consulted with experts on the subject before preparing their report, and noted that much help would be contributed by these three nations. The U.S. would contribute fissile materials and technical knowledge; Britain could assist in training continental engineers; while Canada could provide natural uranium and a reactor produced there which is especially suitable to Europe's needs, the report stated. (In Washington, Lewis L. Strauss, Chairman, USAEC, said full U.S. cooperation would be given EURATOM, and hailed the plan as essential to Europe's well-being and political security.)

GREAT BRITAIN:- Humphreys and Glasgow, Ltd., London, who have obtained world rights outside the American continent for the Alco Products, Inc. "package" nuclear power plant, have received inquiries from authorities and companies all over the world on this plant, the company states. (This Alco Products designed and built plant, recently furnished U.S. Corps of Engineers, is now in operation at the Ft. Belvoir, Va., engineer center. Of the pressurized water type, primary objective was to make it as light and small as possible, looking toward eventual transport by aircraft.)

SOVIET UNION:- The new constant gradient proton synchrotron of the USSR's Joint Institute of Nuclear Physics, near Moscow, has achieved a beam energy of 10 billion electron-volts, a record level, Marian Danysz, deputy director of the Institute told the University of Rochester's recent seventh annual conference on high energy nuclear physics. (At present the highest capacity in the U.S. is the 6.3 billion electron-volt Bevatron at the University of California's Berkeley campus, although a 25 billion electron-volt alternate gradient proton synchrotron is now being built at Brookhaven National Laboratory, to be finished in 1960.)

CANADA:- Changes being made in design and other features of this country's first nuclear power reactor will delay construction schedule, and increase costs to some extent. Known as the nuclear power demonstrator, the reactor will be used to obtain data on nuclear power generation and costs. It is to be built on the Ottowa River, near Des Joachims, Quebec. Original costs were set at $14.5 million; what the increase will be is not yet known. Completion, set originally for mid-1959, may be a year late.

W. GERMANY:- Germany will follow British practice and built nuclear reactors employing natural uranium, Minister for Atomics Herr Balke recently said on his return from a trip to the U.S., Britain and Canada. He observed that in Canada he had discussed a contract for 500-tons of natural uranium; this, he said, would supply German needs for several years.

CONTRACTS AWARDED...on nuclear jobs...

TURBINE SUB-CONTRACT AWARDED:- De Laval Steam Turbine Co., Trenton, N.J., has received sub-contract from Babcock & Wilcox Co to design and furnish the main rotating machinery and associated feed system auxiliaries for the U.S.'s first nuclear powered passenger cargo ship. B&W holds prime USAEC contract for designing, developing, fabricating and supervising the installation of a pressurized water reactor and associated propulsion system in this ship, which will be in the twenty-knot class. (Contract for plans and specifications for the hull has been awarded George G. Sharp, Inc., New York.)

RADIOACTIVE WASTE FACILITY TO BE CONSTRUCTED:- Fluor Corp., Ltd., Los Angeles, has been awarded letter contract for construction of storage tanks and related facilities to handle radioactive wastes at the national reactor testing station, Idaho Falls, Idaho. An approximately $1,900,000 job, Fluor will construct two 300,000-gal. stainless steel tanks, with piping, associated pumps, piping tie-ins, etc. Contract calls for work to be completed by June 30, 1958 for the USAEC.

FRENCH COMMISSION BUYING IN U.S.: -Contract has been signed by Radiation Counter Laboratories, Inc., Skokie, Ill., to produce the first commercial 1024-channel neutron time-of-flight analyzer for the Saclay laboratories of the French Atomic Energy Commission.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

PRODUCTS FROM THE MANUFACTURERS:- General purpose scaler, RIDL model 206, combines preset count and preset time. Linear amplifier is said to provide 1 mv sensitivity with attentuation of 1 to 1/16. Continuously variable high voltage supply has range of 500-2500 volts, or 500-5000-volts with regulation said to be 0.002% for 1% change in line voltage. --Radiation Instrument Development Laboratory, Chicago 21, Ill.

Disposable package ion-exchange unit, model XP 15, is said to reduce cost of removing radioactivity from contaminated water. Measuring 15-in. in diameter, by 40-in. high, the unit may be used for cation exchange, anion exchange, or mixed-bed demineralizing. --The Permutit Co., New York 36, N.Y.

Radioactive alkaloid gramine-C-14 has been added to list of radioactive carbon-14 compounds available from this source. Suggested uses are in preparing tagged tryptophan, studying tryptophan chemistry, etc. --Nuclear-Chicago Corp., Chicago, Ill.

PRODUCT MANUFACTURERS' NEWS:- New facilities are now occupied by Applied Radiation Corp., at Walnut Creek, Calif., where this manufacturer of electron linear accelerators has erected a $500,000 plant. (Affiliated with Archer-Daniels-Midland Co., processor of chemicals, vegetable and marine oils and other agricultural products, Applied Radiation confines its activities to high energy accelerators and microwave components. It offers accelerators, with beam energies from 2 to 80-million electron-volts, for applications in processing foods, drugs and chemicals and for nuclear research.)

Construction is underway on expanded facilities for Radiation Instrument Development Laboratory, Chicago. The firm expects that the new plant space will enable it to triple present production.

PRODUCTS UNDER EXPERIMENTAL DEVELOPMENT:- New type fuel potentially useful in nuclear power reactors, and developed at Argonne National Laboratory, was described last week before annual meeting of American Ceramic Society at Dallas, Tex. In a paper "Thoria-Urania Bodies and Irradiation Studies", by the five Argonne people who did the work, the use of ceramic pellets of urania-thoria as fuel constituents in an experimental reactor was described. The authors pointed out that some of the major advantages of ceramic fuels for reactors are that they will withstand high temperatures; are highly resistant to corrosion in water; and that they "grow" comparatively little under irradiation.

New device for making nuclear reactors inherently safe, called a "convergatron", was described before recent meeting of American Physical Society by Lyle Borst, chairman of physics department at New York University. Dr. Borst said that its use in a nuclear power plant would guarantee safe operation of the plant since it would allow sub-critical mass of uranium fuel to be used; this would make an unscheduled reactivity increase impossible. (Convergatron is essentially a neutron amplifier. Fission chain reaction in nuclear power plant could be controlled in normal operation by insertion and removal of the convergatron's neutron source.)

Nuclear chain reaction has now been sustained by the sodium reactor experiment being developed under USAEC contract by Atomics International at its Canoga Park, Calif., plant. The first sodium cooled thermal reactor to produce a sustained nuclear chain reaction, the reactor operated at about 1-kw. of heat at its initial start-up; its design capacity is 20,000-kw. of heat. After shakedown, its heat will be sold to Southern California Edison Co. to generate about 6,500-kw. of electricity.

Babcock & Wilcox Co. has completed first series of tests of a full-scale version of the core for Consolidated Edison Co.'s nuclear reactor for which it holds construction contract. Work was done at B&W's critical experiment laboratory near Lynchburg, Va. (The reactor, for Con Edison's nuclear power plant at Indian Point, N.Y., will mark first use of large quantities of thorium in connection with a nuclear power plant project.)

MANUFACTURERS' LITERATURE:- New 8-page brochure describing its nuclear shielding product line is available from Ameray Corp's. nuclear products division, Kenvil, N.J. Protective windows; reactor doors; portable shields and containers; lead lined fume hoods; etc., are illustrated.

New technical bulletins describing products added to its line have been issued by Nucleonic Corp. of America, 196 DeGraw St., Brooklyn 31, N.Y.

ATOMIC ENERGY PATENT DIGEST...latest grants & other news...

PATENT GRANTS TO INDIVIDUALS OR PRIVATE ORGANIZATIONS:- Apparatus for X-ray analysis of liquid materials. U.S. Pat. No. 2,791,698 issued May 7, 1957; assigned to Esso Research and Engineering Co. (Application date: Dec. 19, 1956.) (Inventors: G.V. Dyroff, Paul Skiba, Jr., August Y. Mottlau.)

Process for removal of hafnium from zirconium-containing material. U.S. Pat. No. 2,791,485 issued May 7, 1957; assigned to Commonwealth Sci. and Ind. Research Organization, E. Melbourne, Australia. (Application date: June 8, 1953, in U.S.; Dec. 3, 1952, in Australia.) (Inventor: Ivan E. Newnham.)

Power supply for radiation detectors or the like. U.S. Pat. No. 2,790,947 issued Apr. 30, 1957, to Nicholas Anton, Brooklyn, N.Y.

PATENT GRANTS TO GOVERNMENTAL ORGANIZATIONS:- Reclaiming uranium from calutron parts. U.S. Pat. No. 2,790,701 issued Apr. 30, 1957; assigned to United States of America (USAEC). (Application date: Mar. 9, 1945.) (Inventor: Martin D. Kamen.)

Acid treatment of phosphate rock to recover phosphates and uranium. U.S. Pat. No. 2,790,702 issued Apr. 30, 1957; assigned to United States of America (USAEC). (Application date: June 21, 1955.) (Inventor: Robert F. McCullough.)

Nuclear reactor. U.S. Pat. No. 2,790,760 issued Apr. 30, 1957; assigned to United States of America (USAEC). (Application date: Aug. 10, 1954.) (Inventor: R.W. Powell.)

Nuclear reactor. U.S. Pat. No. 2,790,761 issued Apr. 30, 1957; assigned to United States of America (USAEC). (Application date: May 16, 1952.) (Inventor: L.A. Ohlinger.)

Ionization chamber for fission counting. U.S. Pat. No. 2,790,919 issued Apr. 30, 1957; assigned to United States of America (USAEC). (Inventors: J.H. Lykins, M.J. Bartkus, H.A. Kermicle.) (Application date: Sept. 29, 1950.)

Radiographic method for detecting activity-bearing particulate matter. U.S. Pat. No. 2,790,908 issued Apr. 30, 1957; assigned to United States of America (Secretary of the Navy.) (Application date: Aug. 7, 1953.) (Inventors: P.D. La Riviere, S.K. Ichiki.)

Liquid level indicator. U.S. Pat. No. 2,791,119 issued May 7, 1957; assigned to United States of America (USAEC). (Application date: Mar. 28, 1956.) (Inventors: W.H. Zinn, J.M. Harrer.)

Radio frequency ion pump. U.S. Pat. No. 2,791,371 issued May 7, 1957; assigned to United States of America (USAEC). (Application date: Jan. 9, 1956.) (Inventors: J.S. Foster, Jr., F. Fairbrother, Jr.).

RAW MATERIALS...prospecting, mining. marketing...

UNITED STATES:- Two recent uranium milling contracts signed by the USAEC with commercial groups will give some 4,800 tons per day of uranium milling capacity to the Ambrosia Lake area. Under one of the contracts, signed by the USAEC with Homestake-Sapin Partners, of Grants, N.M., the USAEC will purchase all uranium concentrates from the uranium processing mill which Homestake-Sapin will erect and operate in the Grants, N.M., area. (The company is a limited partnership of Homestake Mining Co., San Francisco, and Sabre-Pinon Corp., Santa Fe, N.M.) The mill will have about 1,500 tons per day capacity, and will cost approximately $9 million; financing will be done by Homestake.

Other contract calls for purchase by the USAEC of uranium concentrates from mill to be erected by Kermac Nuclear Fuels Corp. of Oklahoma City, Okla. With about 3,300 tons per day of uranium milling capacity, the mill, to be erected in McKinley County, N.M., will cost approximately $16 million. (Kermac Nuclear Fuels consists of four firms with substantial ore reserves in the area: Kerr-McGee Oil Industries, Inc.; Pacific Uranium Mines Co.; Anderson Development Corp.; and Ambrosia Lake Uranium Corp.) Kerr-McGee now operates a uranium processing mill at Shiprock, N.M.

CANADA:- Lorado Uranium Mines recently turned out its first uranium oxide concentrates from its Beaverlodge mill which was started up about a month ago, an official advises. Extraction rate, based on first results, is said to be high. The company operates its own sulfuric acid plant, producing some 60 tons per day from its own pyrite deposits.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

May 14th, 1957